

REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's comments set forth in the Office Action of August 26, 2004.

All of the Examiner's objections and rejections are traversed.

Reexamination and reconsideration are respectfully requested.

The Office Action

Claims 1, 3, 6, 9, 22 and 28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-22 of co-pending Application No. 706,430, Applicants traverse this rejection.

Claims 1, 3, 6-9, 11, 14-21, 24-25 and 29-30 remain in this application. Claim 2, 4-5, 10, 12-13, 22-24, 27-28 and 31 have been canceled.

Claims 17-21 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hansen (U.S. Patent No. 6,509,974).

Claims 1, 3, 6, 9, 22, 24-26 and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Smirnov et al. (U.S. Patent No. 6,546,364) in view of Mima et al. (U.S. Patent Publication No. 2002/0101604).

Claims 7-8, 11, 14-16, 27 and 29-31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Smirnov et al. and Mima et al. in view of Chi (U.S. Patent No. 5,751,580).

Claim 23 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Smirnov et al. and Mima et al. in view of Tomory (U.S. Patent No. 5,509,974).

Comments and Arguments

Claims 2, 4-5, 12-13, 22-24, 27-28 and 31 have been canceled without prejudice or disclaimer of the subject matter therein.

In regard to the rejection of independent claim 17, the Office Action asserts that Hansen anticipates the printing workflow system of the claim. The Applicants respectfully traverse this assertion. Hansen does not disclose or fairly suggest the autonomous cells of the present claim. The autonomous cell of the present claims is a logical grouping of resources capable of entirely completing a document processing job from start to finish entirely within the autonomous cell without dependence upon other cells. The Applicants respectfully submit that Hansen fails to teach or fairly suggest this concept. Rather, Hansen discloses a production

printing system that utilizes computer software to receive production printing document jobs and electronically transmit the jobs to the individual output devices. Therefore, the Applicants respectfully submit that independent claim 17 and claims 18-21 which depend therefrom distinguish over the cited reference and are in condition for allowance.

Independent claims 1 and 9 have been rejected in view of the combination of Smirnov and Mima. Applicants respectfully submit that the combination is improper. Smirnov teaches a workflow creation engine wherein state nodes and task nodes are utilized to define processes and resources used in the workflow. Smirnov discloses that the preceding state nodes to a task node must be fulfilled, that is logically "anded" in order for the present task to be performed. That is to say the all the parts preceding a task node must be present for that task to be performed. Mima teaches a method for a printer network to perform parallel printing when a printer in the network malfunctions. Mima discloses a process of moving a remaining print job from a printer which malfunctions (breaks down, runs out of print media or runs out of toner or ink) to another idle printer. This parallel printing process teaches away from the workflow engine of Smirnov. Therefore, the Applicants respectfully submit that the combination of Smirnov and Mima is in proper and that independent claims 1 and 9 and claims 3, 6-8, 25-26, 11, 14-16 and 29-30 which depend therefrom patentably distinguish over the combination of references.

Independent claims 1 and 9, have been further amended to further denote the distinction of arranging print production devices and resources into autonomous cells. The Office Action asserts that Smirnov teaches the printing workflow system of the present application. Specifically, the Office Action states that Smirnov discloses a plurality of autonomous cells, wherein each cell is comprised of a plurality of devices and resources at least some devices and resources performing distinct operations from one another, and that are capable of accomplishing at least one type of document processing job.

The Applicants respectfully traverse the Office Action's assertion. Smirnov discloses a workflow creation method and apparatus which utilizes state nodes and task nodes, i.e. a bill of materials and a bill of resources, to define the manufacturing process. Figure 2 of Smirnov, cited by the Office Action as disclosing the present claim, shows state nodes and task nodes interconnected to show possible paths which may be used to produce documents based on bill of materials and bill of

resources. In other words, Figure 2 shows the materials and resources needed to produce a document. As can be seen from the figure, there are many different paths that can be taken to process the document and all the resources (task nodes) are interconnected and rely upon each other in order to complete the process. Smirnov does not disclose a separation of the resources into the autonomous cells of the present application.

An autonomous cell receives a document processing job or sub-job thereof, where a sub-job is understood to be a complete document production, but is less than the total number or document products to be produced. The autonomous cell contains resources capable of processing a job or sub-job from start to finish entirely within the cell such that there is no dependence upon the other cells for completion of the job or sub-job. For example, a first autonomous cell might comprise a printer, a collator and a binder, whereas a second cell might include a printer, a collator and a shrink wrapper wherein they have devices and resources at least some of which are different from one another. These cells are capable of executing certain document processing jobs and sub-jobs requiring the specific devices or resources found in the individual cells, but are constrained from other jobs or sub-jobs in the sense that, for example, the first cell cannot process a job or sub-job that requires a shrink wrap operation and the second cell cannot process a job or sub-job that requires a binder. Some cells may even have similar devices and resources to produce similar output, but each cell is capable of completing an assigned job using only that cells own devices and resources. Applicants respectfully submit that Smirnov either alone or in combination with Mima fails to teach or fairly suggest the printing workflow system of the present application. Rather, Smirnov teaches a method and apparatus for creating a workflow for a manufacturing process wherein all the resources are interconnected and interdependent. Mima discloses a method for performing parallel printing between multiple printers wherein the printers are in network connection with a computer system.

Furthermore, the concept of a two-level scheduling approach for document processing jobs, which while relevant to the autonomous cell system of the present application, would not be relevant to Smirnov or Mima which do not employ the autonomous cell design. A document processing job is split into sub-jobs according to the workflow which is determined by analyzing the steps that are required to complete the job and the specific inclusion of devices and resources into each cell.

The sub-jobs are assigned to a cell capable of processing the entire sub-job autonomously. The sub-jobs are received at the cell and further split into lots that are sent to the cell devices and resources. For example, if a document processing job is to be printed, collated and bound, after a first lot is printed and moves on to the collator a second lot can begin being printed while the first lot is being collated. Applicants respectfully submit that nowhere does the Smirnov and Mima teach or fairly suggest a two-level scheduling process rather the combination discloses only a normal or single level scheduling process, wherein a document processing job that includes color and black-and-white printing be separated into sub-jobs to be sent to different output devices. Wherein the Hansen patent may split a production printing job into a color sub-job and a black-and-white sub-job to send to different devices, the present application may still further split the black-and-white sub-job and/or the color sub-job into lots to better utilize the devices and resources of the autonomous cells where Smirnov and Mima do not.

Therefore, the Applicants respectfully submit that Smirnov either alone or combined with Mima fails to teach or fairly suggest the printing workflow system of claim 1. Further, the Applicants respectfully submit that independent claim 1 and claims 3, 6, 7, 8, 25 and 26 which depend therefrom distinguish over the cited references and are in condition for allowance for at least these reasons.

Furthermore, as independent claim 9 and claims 11, 14, 15, 16, 29 and 30, which depend therefrom, disclose the method of the previously cited apparatus claims for at least the same reasons stated above, the Applicants respectfully submit that these claims distinguish over the cited art and are in condition for allowance.

CONCLUSION

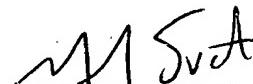
For the reasons detailed above, it is respectfully submitted all claims remaining in the application (Claims 1, 3, 6-9, 11, 14-21, 25, 26 and 29-30) are now in condition for allowance. The foregoing comments do not require unnecessary additional search or examination.

In the event the Examiner considers personal contact advantageous to the disposition of this case, he/she is hereby authorized to call Mark S. Svat, at Telephone Number (216) 861-5582.

Respectfully submitted,

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